RECEIVED
CENTRAL FAX CENTER
JAN 0 9 2006

60,130-1885; 02MRA0391

UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Weber
Serial No.:	10/701,997
Filed:	11/5/2003
Examiner:	Schwartz, Christopher P.
Art Unit:	3683
Title:	Temperature Control System for Air/Oil Shock Absorber Module

M/S Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL APPEAL BRIEF

Dear Sir:

In response to the Notice of Non-Compliant Brief mailed December 15, 2005, appellant now supplements its original brief. This supplemental brief includes the evidence appendix and the related proceeding appendix. Notably, there are no attachments to either appendix.

Also, the Notice attached a communication regarding the appeal indicating that the brief or its fee was untimely. It is assumed that this is somehow related to the non-compliant brief. Appellant's brief was timely filed as was its fee. If the Patent Office believes otherwise, the examiner is urged to telephone appellant's representative.

REAL PARTY IN INTEREST

The real party in interest is Arvin Technologies, Inc. Arvin Technologies, Inc. is part of the ArvinMeritor family of companies.

RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings related to this appeal, or which may directly affect or may be directly affected by, or have a bearing on, the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1-5 are pending, with claims 1 and 5 being independent. All five of the pending claims are rejected under 35 USC §103.

STATUS OF AMENDMENTS

No amendment after final has been filed in this application.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a system that can avoid hot air being received in the air spring of a combined shock absorber and air spring. A shock absorber 22 has been combined with an air spring 30 in the past. The shock absorber 22 can reach relative high temperatures during operation, and in the past has unduly heated the air within the air spring 30.

The present invention is directed to solving this problem. In particular, a temperature responsive valve 42 designed to open at a particular temperature (see paragraph 11) is incorporated into an end of the air spring. If the air within the air spring 30 reaches a pre-determined temperature, the valve 42 will open allowing hot air to leave the air spring. After the air has left the valve 42, the air spring will be somewhat collapsed (see Fig. 2 and paragraph 13). When this occurs, a suspension 24 associated with the air spring and shock absorber combination will be closer to a vehicle frame 26 than was the case in Figure 1. An operating level 38 will also move, opening a leveling valve 32. As the leveling valve 32 is opened, air will be delivered from a supply line 36 into a line 40 and into the air spring 30. This additional air will drive the air spring back to its full expanded position such as shown in Figure 1. Essentially, hot air from the air spring is replaced with cooler air from a supply line 36, and the temperature of the air spring is thus lowered.

Summary of the Claims

Independent claim 1 is the broadest claim in this application, and requires that there be an air spring defining an air volume and surrounding a portion of a shock absorber, with the shock absorber extending into the air spring. A control is recited that avoids an undesirably high temperature within the air volume by replacing hotter air with cooler air.

Claim. 2 is dependent to claim 1, and requires that there be a temperature-responsive valve that opens to allow air to leave the air volume if a pre-determined temperature is reached.

Claim 3 is dependent to claim 2, and requires that if the temperature responsive valve opens and allows air to leave the air volume, a leveling valve is operative to deliver the cooler air into the air spring.

Claim 4 is dependent to claim 2 and recites that the temperature-responsive valve is mounted in an end of the air spring.

Independent claim 5 generally includes the limitations found in claims 1, 2 and 3 in combination, along with positively reciting an air supply line for providing air from the vehicle's air supply system.

ARGUMENT

Obviousness Rejection Over the Harrison and Sakai, et al. Patents

Claim 1

Claim 1 is rejected over a combination of the reference to Harrison taken with the reference to Sakai, et al. The other claims are rejected over this base rejection and with a tertiary reference applied.

The examiner has taken the position that the Harrison patent discloses a leveling system that compensates for changes in temperature via valves 25 and 28. The examiner recognizes that Harrison does not have a shock absorber/air spring combination, and relies upon the Sakai, et al. reference to show that the shock absorber/air spring combination is known. The examiner then argues that it would have been obvious to utilize a shock absorber/air spring combination into the system of Harrison "so the damping and leveling characteristics of the system may be readily adjusted."

The examiner puts emphasis on a discussion with the Harrison patent of options for compensating for temperature rise which in turn lead to excessive pressure build-up in the

system. The examiner alleges the reference teaches that temperature rise within a reservoir can cause air within a reservoir to be blown off into the atmosphere through a dump valve or a relief valve. The examiner argues the cooler atmospheric air may be introduced into the system. All of this misses the point that Harrison's valve is in an air reservoir, not a suspension component.

Appellant asks that this rejection be reversed.

The Harrison reference merely discloses a reservoir for generating pressurized air for use in a suspension component 21. The "suspension component" 21 is disclosed schematically. A valve 28 prevents excessive pressure from being generated in a high pressure container 1 which is connected to supply pressurized air to the suspension unit 21. If the valve 28 were to open, air would not be removed from the suspension unit 21, as a check valve 18 would prevent this air flow.

The examiner also points to the valve 25 on the low pressure chamber 2. Valve 25 is a vacuum relief valve that will selectively allow air to move into a low pressure chamber 2. Again, if this valve were to open to allow air into the low pressure chamber 2, it would not communicate air into the suspension unit 21, as the check valve 22 would block this flow. Simply, valves 28 and 25 provide no function, which would meet the claimed functional step of replacing hot air in an air spring air volume with cooler air.

The examiner proposes to modify the Harrison device to include a shock absorber and air spring as shown by Sakai, et al. If this combination were to be made, all that could possibly be done is to substitute the Sakai, et al. combined shock absorber and air spring for the schematically disclosed suspension unit 21. Sakai, et al. still requires a supply of pressurized air. As an example, in the description at the bottom of column 4, lines 64+, Sakai, et al. discloses that

a connection 12 receives pressurized air from some source. Perhaps the source would be the high pressure tank 1 of Harrison, but this would not meet the claimed limitations. Nothing going on in the high pressure container 1 of Harrison would meet the limitations of a control for avoiding an undesirably high temperature within an air spring air volume by replacing hotter air with cooler air.

The Sakai, et al. air spring would need to receive pressured air from somewhere, and again perhaps the Harrison reservoir could supply the pressurized air. However, what would be substituted into the Harrison device by the Sakai, et al. patent is to provide further detail for the schematic suspension unit 21. The only possible combination of Harrison and Sakai, et al. would be to utilize a Sakai-type air spring and shock absorber as the suspension unit 21. The valve 28 of Harrison would be completely independent of what was occurring within the air spring of this modified system, and the valve 25 would have even less influence. Simply, there is nothing within these combined references that would disclose a control for avoiding undesirably high temperatures within the air volume defined within the air spring by replacing hotter air with cooler air.

Rejection of Claims 2-5 is Improper for Additional Reasons

The examiner argues that replacing the valves 25 or 28 with temperature-responsive valves would be obvious since such valves are known as shown by the Chamberlin, et al. patent. It is not appellant's contention it invented the temperature-responsive valve. Rather, it has utilized a temperature-responsive valve at a location within a particular claimed suspension component. There would be no suggestion to replace either valve 25 or 28 of Harrison with a

temperature-responsive valve. The valves of Harrison include a dump valve to prevent over-pressure on a high pressure chamber 1 and a vacuum relief valve to prevent a vacuum within the low pressure chamber 2. There would be no suggestion to replace either of those with a temperature responsive valve to control air flow within a reservoir in view of Chamberlin, et al.

Claims 3 and 5 are Independently Patentable

The examiner does not address why these limitations would be "obvious" when they are not shown in either Harrison or Sakai, et al. Simply, these claims are separately patentable for this additional reason.

The Rejection of Claim 4 is Additionally Improper

Claim 4 is dependent to claim 2, and states that the temperature-responsive valve is placed in an end of the air spring. This claim is separately patentable in that neither of the valves 28 or 25 could possibly be placed in the air spring of Harrison modified by Sakai, et al. Simply, the valves 25 and 28 provide functions on the high pressure chamber 1 and the low pressure chamber 2. One would not be motivated to move those valves into the claimed location. The examiner simply argued that all that is being claimed is "alternative equivalent choice of design." Of course, even if true, this is improper grounds of rejection. It is, however, not true. The positioning of the valves as shown in Harrison would not provide the function required by claims 1 or 5, and would certainly not be "equivalent" to the requirement of claim 4. The valves 25 or 28 placed on the air spring of Harrison modified by Sakai, et al. would not provide the function of controlling the pressure within the high pressure chamber or the low pressure chamber. That

is, the alleged "design choice" would prevent the Harrison valves from performing their intended function. Simply, this rejection is improper.

CONCLUSION

For the reasons set forth above, the rejection of all claims is improper. Reversal of all rejections is requested.

Respectfully submitted,

CARLSON, GASKEY & OLDS

Theodore W. Olds, Reg. No. 33,080
400 W. Maple, Suite 350
Birmingham, MI 48009
(248) 988-8360

Dated: January 9, 2006

CERTIFICATE OF TRANSMISSION UNDER 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted to the United States patent and Trademark Office, fax number (571) 273-8300, on January 9, 2006.

Laura Combs

CLAIMS APPENDIX

1. An air spring and shock absorber module comprising:

an air spring defining an air volume, said air spring surrounding a portion of a shock absorber, said shock absorber extending within said air spring; and

a control for avoiding an undesirably high temperature within said air volume by replacing hotter air with cooler air.

2. A module as set forth in Claim 1, wherein said control incorporates a temperature responsive valve that opens to allow air to leave said air volume if a predetermined temperature is reached.

3. A module as set forth in Claim 2, wherein a leveling valve is operative to deliver said cooler air into said air spring should said temperature responsive valve open to allow air to leave said air volume.

4. A module as set forth in claim 2, wherein said temperature responsive valve is mounted in an end of said air spring.

5. An air spring and shock absorber module and system for reducing and regulating the air temperature within the air spring comprising:

an air spring defining an air volume, said air spring surrounding a portion of a shock absorber, said shock absorber extending within said air spring;

a temperature responsive valve provided on said air spring to monitor temperature within said air spring and to release hot air from said air volume when a predetermined temperature is reached;

an air supply line for providing air from a vehicle's air supply system; and

a leveling valve on said air supply line for enabling the flow of air from said air supply line into said air volume when a suspension which is to be attached to said shock module moves due to a release of hot air from said air volume.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.